

2008 Drinking Water Quality Report



A Message from the Water Director

This year marks the 95th anniversary of a significant milestone in Fort Worth's development. Do you know what that is?

It is the completion of the Lake Worth dam and reservoir. Construction began in 1911. Back then the city's population was about 73,000. The well supplies were dwindling, and the Clear Fork supply was insufficient for a growing population.

In some ways, not much has changed. Lake Worth is still a critical component of our water supply system. We still must find new supply sources to quench the needs of a growing population.

Another constant is our commitment to protecting public health. This is evidenced by

both the "superior" designation our drinking water system has maintained from the Texas Commission on Environmental Quality (TCEQ) and the 20-year stretch the wastewater system has without a permit violation.

This report's primary purpose is to tell you about the quality of your drinking water. The good news is your drinking water in 2008 met all regulations for protecting public health. Actually, it is better than what the minimum standards require.

How does the level in our water compare to the maximum allowed by regulations? When you review the charts on pages 2 and 3, it is the shaded columns you'll want to compare. You can see for yourself that the news is good.



Water Department Leadership Team

From left to right: Assistant Director Sebastian "Buster" Fichera, Assistant Director Travis Andrews, Director S. Frank Crumb, P.E., Assistant Director Kara Shuror, Assistant Director Charly Angadicheril, and Assistant Director Andrew Cronberg, P.E.

Fort Worth Water Department

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www.FortWorthGov.org/water

www.savefortworthwater.org

Administrative Office:

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1000 Throckmorton St.

The Water Department is part of the Fort Worth city government. The City Council meets each Tuesday at City Hall, 1000 Throckmorton St. The meetings are at 7 p.m on the 1st & 2nd Tuesday of the month. The meetings are at 10 a.m. all other Tuesdays.

Mailing this report to our customers is a federal and state requirement. It also is posted on our Web site.

If you would like additional copies, call or e-mail us.

The Fort Worth Water Department Laboratory was the first municipal lab in Texas to earn accreditation under the National Environmental Laboratory Accreditation Program. It is accredited for water, wastewater and soils testing. Some of the testing for this report was performed by the city lab and other by state contract labs.



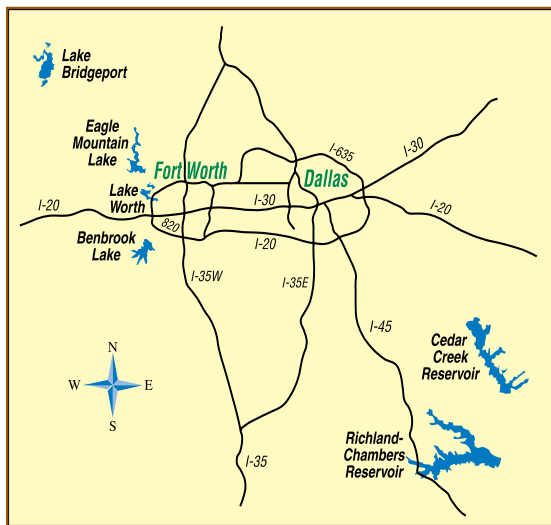
Lakes Are the Sources for City's Drinking Water

Fort Worth uses surface water from Lake Bridgeport, Eagle Mountain Lake, Lake Worth, Benbrook Lake via the Clear Fork of the Trinity River, Cedar Creek Reservoir and Richland-Chambers Reservoir.

Fort Worth owns Lake Worth. The U.S. Army Corps of Engineers is responsible for Benbrook Lake. The other four lakes are owned and operated by Tarrant Regional Water District (TRWD).

TRWD monitors the raw water at all intake sites for *Cryptosporidium*, a microbial parasite common in surface water. The source is human and animal fecal waste in the watershed.

The 2008 monthly testing revealed very low levels. The testing methods used cannot determine if the parasite is dead and inactive or alive and capable of causing cryptosporidiosis. This is an abdominal infection that causes nausea, diarrhea and abdominal cramps after indigestion. The



drinking water treatment process is designed to remove *Cryptosporidium* through filtration.

The turbidity measure on page 2 of this report shows the effectiveness of Fort Worth's filtration. Turbidity measures the clarity of water.

As water travels over the land or through the ground, it dissolves naturally occurring minerals and radioactive material. Water also can pick up substances resulting from

animal waste or human activity.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate the water poses a health risk.

Contaminants that may be present in source water before treatment include microbes, inorganic contaminants, pesticides, herbicides, radioactive materials and organic chemical contaminants.

In addition, contaminants may be found in drinking water that may cause taste, color or odor problems. These types of problems are not necessarily causes for health concerns. For more information on taste, odor or color of drinking water, please contact us at 817-392-4477 or wpe@FortWorthGov.org.

To ensure tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ) regulate the amount of certain contaminants in water provided by public systems.

TCEQ currently is updating its assessments of Fort Worth's water supply lakes. The report describes the susceptibility and types of constituents that may come in contact with our source waters based on human activity and natural conditions. For more information on the source water assessments, please contact us.

Special Health Notice

You may be more vulnerable than the general population to certain microbial contaminants, such as *Cryptosporidium*, in drinking water. Infants, some elderly or immunocompromised persons, such as those undergoing chemotherapy for cancer, those who have undergone organ transplants, those who are undergoing treatment with steroids and people with HIV/AIDS or other immune system disorders can be particularly at risk from infections.

You should seek advice about drinking water from your physician or health care provider.

Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

What's in the Water

Contaminant	Measure	MCL	2008 Level	Detection Range	MCLG	Common Sources of Substance
Barium ¹	ppm	2	0.058	0.033 to 0.058	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beta particles & Photon emitters ²	pCi/L	50	6.6	4.6 to 6.6	N/A	Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation
Fluoride	ppm	4	0.65	0.52 to 0.65	4	Water additive that promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate (measured as Nitrogen)	ppm	10	0.28	0.11 to 0.28	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (measured as Nitrogen)	ppm	1	0.038	0 to 0.038	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Bromate	ppb	10	4.8	0.6 to 4.8	0	By-product of drinking water disinfection
Haloacetic Acids	ppb	60	30.1	12.7 to 30.1	N/A	By-product of drinking water disinfection
Total Trihalomethanes	ppb	80	52.2	23.6 to 52.2	N/A	By-product of drinking water disinfection
Total Coliforms (including fecal coliform & E. coli)	% of positive samples	Presence in 5% of monthly samples	Presence in 0.8% of monthly samples	0 to 0.8	0	Coliforms are naturally present in the environment as well as feces; fecal coliforms and E. coli only come from human and animal fecal waste.

Turbidity ³	NTU	TT	0.23 Highest single result 100% Lowest monthly % of samples ≤ 0.3 NTU	N/A	N/A	Soil runoff
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Contaminant	Measure	MRDL	2008 Level	Detection Range	MRDLG	Common Sources of Substance
Chloramines	ppm	4	3.4	1.4 to 4.3	4	Water additive used to control microbes

Contaminant	Measure	90th percentile ⁵	# of sites exceeding action level	MCL	MCLG	Common Sources of Substance
Lead ⁴	ppb	2.4	0	Action Level =15	N/A	Corrosion of household plumbing systems; erosion of natural deposits
Copper ⁴	ppm	0.457	0	Action Level =1.3	N/A	

Contaminant	High	Low	Average	MCL	MCLG	Common Sources of Substance
Total Organic Carbon ⁶	1	1	1	TT = % removal	N/A	Naturally occurring

¹ The test results shown above are from 2002. Because Fort Worth historically has had low levels of metals in its water, the Texas Commission on Environmental Quality (TCEQ) has Fort Worth on a reduced monitoring schedule. The next testing is scheduled for 2009.

² The test results shown above are from 2005. Because Fort Worth historically has had low levels of radionuclides in its water, TCEQ has Fort Worth on a reduced monitoring schedule. The next testing is scheduled for 2009.

³ Turbidity is a measure of the cloudiness of water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

⁴ The test results shown above are from 2005. Because Fort Worth historically has had low levels of lead and copper in its water, TCEQ has Fort Worth on a reduced monitoring schedule. The next testing is scheduled for 2009.

⁵ 90th percentile value: 90% of the samples were at or below this value. EPA considers the 90th

percentile value the same as an "average" value for other contaminants. Lead and copper are regulated by a treatment technique that requires systems to control the corrosiveness of their water. If more than 10% of tap water samples exceed the action level, water systems must take additional steps.

⁶ Total Organic Carbon is used to determine disinfection by-product precursors. Fort Worth was in compliance with all monitoring and treatment technique requirements for disinfection by-product precursors.

Unregulated Contaminants

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Contaminant	Measure	Detection Range	2008 Level	MCL	MCLG	Common Sources of Substance
Chloral Hydrate	ppb	0 to 1.9	1.9	Not regulated	0	By-product of drinking water disinfection
Bromoform	ppb	0 to 1.5	1.5	Not regulated	0	By-product of drinking water disinfection; not regulated individually; included in Total Trihalomethanes
Bromodichloromethane	ppb	3.0 to 17.3	17.3	Not regulated	0	
Chloroform	ppb	2.2 to 18.4	18.4	Not regulated	0	
Dibromochloromethane	ppb	2.0 to 9.5	9.5	Not regulated	60	
Dichloroacetic Acid	ppb	2.9 to 13.4	13.4	Not regulated	0	By-product of drinking water disinfection; not regulated individually; included in Haloacetic Acids
Trichloroacetic Acid	ppb	0.0 to 9.7	9.7	Not regulated	300	

Abbreviations Used in All Tables

Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

MCL - Maximum Contaminant Level; the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG - Maximum Contaminant Level Goal; the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MRDL - Maximum Residual Disinfectant Level; the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG - Maximum Residual Disinfectant Level Goal; the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

N/A - Not Applicable.

NTU - Nephelometric Turbidity Unit; a measure of water turbidity or clarity.

pCi/L - Picocuries per liter; a measure of radioactivity.

ppb - Parts per billion or micrograms per liter (g/L).

ppm - Parts per million or milligrams per liter (mg/L).

TT - Treatment Technique; a required process intended to reduce the level of a contaminant in drinking water.

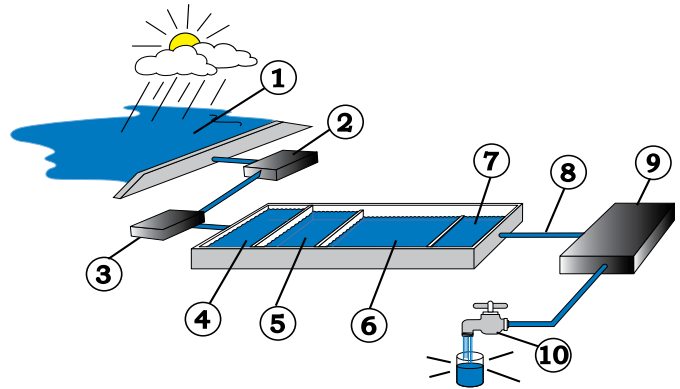
Additional Parameters

This chart lists other items for which the water is tested. These items do not relate to public health so there is no requirement to include them in this report. Some of these secondary constituents are regulated by TCEQ, not EPA. They can impact the taste, odor or color of drinking water and are often important to industrial users.

Item	Measure	2008 Level
Bicarbonate	ppm	94 to 144
Calcium	ppm	74 to 159
Chloride	ppm	15.8 to 26.3
Conductivity	µmhos/m	324 to 480
pH	units	8.28 to 8.42
Magnesium	ppm	3 to 10
Sodium	ppm	11.3 to 27.2
Sulfate	ppm	21.5 to 42.1
Total Alkalinity as CaCO ₃	ppm	94 to 144
Total Dissolved Solids	ppm	185 to 264
Total Hardness as CaCO ₃	ppm	120 to 185
Total Hardness in Grains	grains/gallon	7 to 11

Treatment Turns Lake Water into Drinking Water

1. Reservoirs: Fort Worth water comes from six lakes.
2. Raw Water Pump Station: Here water is pumped from the lake to the water treatment plant.
3. Primary Disinfection: Either ozone or monochloramine (chlorine and ammonia) is added to kill bacteria and viruses. The Eagle Mountain and Rolling Hills water treatment plants use ozone. The North Holly and South Holly water treatment plants use monochloramine.
4. Mixing Chamber: Chemicals, called coagulants and polymers, are added to the water to cause small particles to adhere to each other.
5. Coagulation Basin: The particulate matter begins to clump together.
6. Sedimentation Basin: Particles settle to the bottom of the basin and are removed.
7. Filters: Water is filtered through four feet of coal, sand and gravel.
8. Disinfection: Chloramine is added to provide

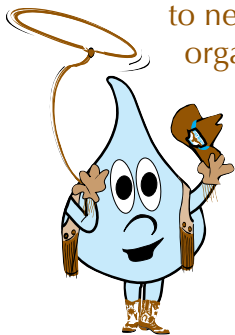


- disinfection all the way to your faucet. The chlorine kills bacteria and viruses. Ammonia is added to reduce the chlorine odor and the amount of chlorine by-products created.
9. Clearwell Storage: Water is temporarily stored in tanks before it is pumped to the public.
 10. Distribution: Drinking water reaches the public through more than 3,200 miles of pipeline.

What You Should Know about Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Fort Worth drinking water does not have elevated lead levels.

SPEAKERS AVAILABLE



We welcome the opportunity to speak to neighborhood groups and civic organizations about water topics, such as drinking water quality, efficient water use or ways to keep grease out of the sewer system. Just contact us by phone or e-mail to make arrangements.

wpe@FortWorthGov.org
817-392-4477

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing.

The city of Fort Worth is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components.

When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking.

If you are concerned about lead in your water, you may wish to have your water tested. The Water Department can do this testing for \$27.20 per faucet. Call 817-392-4477 to make the arrangements.

Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 800-426-4791 or at www.epa.gov/safewater/lead.

Lake Worth Enhancements Happening

As it approaches the century mark, Lake Worth is receiving a great deal of attention.

The city formed a steering committee to help devise a comprehensive capital improvement plan for Lake Worth and its surrounding area. The project's mission is to:

- make Lake Worth a useable resource for Fort Worth residents and surrounding communities;
- manage the watershed to sustain Lake Worth; and
- provide infrastructure to facilitate future growth.

The committee recommended more than \$117 million in projects related to dredging, watershed management and infrastructure improvements.

To fund the items, the Fort Worth City Council dedicated a portion of the revenue from gas drilling beneath the lake.



When Lake Worth first filled on Aug. 19, 1914, it was the biggest municipal water supply lake in Texas and one of the biggest in the nation. It's watershed is more than 2,000 square miles and it covers more than 5,430 acres or almost 8.5 square miles.

Work toward implementation has begun. This summer lake users should see the Arrow S Park boat ramp reopened, following its redesign and reconstruction.

Technical surveys of the lake bottom were performed earlier this year. Engineers will analyze the information to facilitate the dredging of selected areas.

Also, the Planning and Development Department convened a blue-ribbon panel to conduct a Lake Worth Vision Workshop. These representatives from across the country met with stakeholders, toured the area and made recommendations for making Lake Worth a premier destination.

Learn more about water by visiting these Web sites. Many of these sites offer resources for teachers and children.

Fort Worth Water

www.FortWorthGov.org/water
www.savefortworthwater.org

Tarrant Regional Water District

www.trwd.com
www.savetarrantwater.com

Environmental Protection Agency

www.epa.gov

Texas Commission on Environmental Quality

www.tceq.state.tx.us

Texas Water Development Board

www.twdb.state.tx.us
www.savetexaswater.org

American Water Works Association

www.awwa.org
www.drinktap.org

Water Environment Federation

www.wef.org

National Sanitation Foundation

www.nsf.org

Texas Water Conservation Association

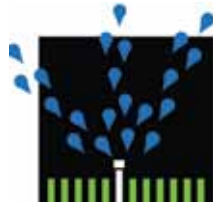
www.twca.org

Requirements Adopted for New Irrigation Systems

The 2007 Texas Legislature passed three laws that target water use efficiency and irrigation systems.

As a result, all cities of 20,000 or more in population have had to adopt irrigation system design standards and permitting requirements.

These new requirements put responsibilities onto irrigators, builders, businesses and homeowners, as well as the city.



The new rules apply to installation of new irrigation systems or when major repairs are made to existing systems.

Here are a few points you should know. The specific irrigation system requirements are posted online or call for a copy.

Look for WaterSense Products

WaterSense is a partnership program sponsored by EPA to promote water efficient products and practices across the country. The WaterSense label makes it easy to find products and services that save water while ensuring performance.



WaterSense labeled products use about 20 percent less water and perform as well or better than their less efficient counterparts.

Look for the WaterSense label on products, such as toilets, and know that you'll be saving water and saving on your utility bill. For a listing of WaterSense approved products, visit www.epa.gov/watersense.

Visit www.epa.gov/watersense to learn more about how to save water and money.

"Test Your WaterSense" and learn about water use in your home; visit www.epa.gov/watersense/quiz.

☑ Hire a qualified professional

Just like plumbers and electricians, irrigators must be licensed by the state. In addition, Fort Worth requires those who wish to do business in the city to register with the Planning and Development Department. Homeowners can install and maintain the irrigation system at their homestead.

☑ Obtain a city permit

This is required whether an irrigator is hired or homeowners do the work themselves.

☑ Obtain the irrigation system plan and maintenance checklist.

Ask the builder, developer, or prior owner for a copy of the irrigation system plan and maintenance checklist. For systems permitted after Jan. 13, 2009, the new home builder must transfer these items to the first home buyer. For older systems these documents may not exist, but it can't hurt to ask.

☑ Learn how to operate your controller.

An irrigation system's water efficiency depends as much on how it is operated as how it is designed and installed. Different seasons mean different watering needs for grass and plants.



Only Tap Water Delivers™

...public health protection

...fire protection

...support for the economy

...the overall quality of life we enjoy

